CLAIMS:

1. An exhaust system for a lean-burn internal combustion engine comprising a soot filter packed with a mass of elongate flat, narrow strip metal and means for generating an oxidant more active than molecular oxygen (O_2) for combusting soot collected on the filter.

2. A system according to claim 1, wherein the oxidant more active than O_2 is at least one of ozone, plasma or NO_2.

3. A system according to claim 2, wherein the NO_2 is provided, at least in part, by catalytic oxidation of the NO component of the NOx contained in the exhaust gas.

4. A system according to claim 3, wherein the system includes an NO-oxidation catalyst upstream of the filter, the catalyst being supported on a metal substrate of the type used in the filter, but at a lower packing density, to permit passage of soot particles.

5. A system according to any preceding claim, wherein the filter has, wholly or domain-wise, a regular coiled, woven or knitted structure.

6. A system according to any preceding claim, wherein the metal of the filter is Type 300 or Type 400 stainless steel.

7. A system according to any preceding claim, wherein the metal of the filter comprises an iron alloy containing at least 11.5% Cr, 4% Al and 0.02-0.25% minor constituents such as rare earth, zirconium or hafnium.

8. A system according to any preceding claim, wherein the width of the metal strip of the filter is up to 2, especially in the range of 0.1 to 0.5 mm and its thickness is 0.2 to 0.8 of its width.

9. A system according to claim 9, wherein the flat, narrow strip metal is a flattened wire

10. A system according to any preceding claim, wherein the filter packing carries a layer catalytic for soot oxidation.

11. A system according to claim 10, wherein the filter comprises a catalytic coating comprising a washcoat including Pt or oxides of Cs and V.

12. A system according to any preceding claim, comprising an exhaust gas treatment system comprising, in order from upstream to downstream, a plurality of metal-based filters adapted to successively trap smaller and smaller particles.

13. A system according to claim 12, comprising at least one wall flow filter for trapping yet smaller particles.

14. A system according to claim 12 or 13, comprising a flow-through monolith between the or each pair of metal-based filters.

15. A system according to claim 14, wherein the or each flow-through monolith comprises a NO oxidation catalyst, whereby to restore the NO_2 content, which had been decreased by reaction with soot in the preceding filter.

16. A system according to any preceding claim, wherein the filter capacity is sufficient to allow the soot to be combusted continuously by the oxidant.

17. A system according to any of claims 1 to 16, wherein the filter capacity is sized for accumulations of soot sufficient to increase pressure-drop significantly before the next period of fast running and the system includes a bypass the pressure-drop through which is equal to the design maximum tolerated pressure-drop through the filter(s) whereby to avoid engine stalling.

18. A system according to claim 17, comprising means to limit soot emission to atmosphere, which means comprising a second stage such as a filter or impingement collector and/or an oxidation catalyst downstream of the bypass.

19. An internal combustion engine comprising an exhaust system according to any preceding claim.

20. A diesel engine according to claim 19.

21. A method of treating an exhaust gas of an internal combustion engine, which method comprising the steps of trapping soot in the exhaust gas on a filter, generating an oxidant more active than molecular oxygen (O_2) for combusting soot collected on the filter from exhaust gas components and combusting the trapped soot in the oxidant, wherein the filter comprises a mass of elongate flat, narrow strip metal.